December 17, 2018

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Ms. Marlene H. Dortch, Secretary
Federal Communications Commission
445 12th Street SW
Washington DC 20554

Re: GN Docket No. 17-183, *Expanding Flexible Use in Mid-Band Spectrum Between 3.7 and 24 GHz*
ET Docket No. 18-295, *Unlicensed Use of the 6 GHz Band*
***Ex Parte* Communication**

Dear Ms. Dortch:

I am a Land Mobile Radio Consultant and am filing this letter on behalf of my many past and present public safety and critical infrastructure clients who utilize licensed 6 GHz band stations in bands 5925-6425 MHz and 6525-6875 MHz.

It is distressing to learn that the FCC intends to allocate this vitally important spectrum for unlicensed devices.

The FCC realizes that use of these unlicensed devices in an outdoor environment will likely cause interference to licensed services. To counter this, the FCC proposes to limit the operation of unlicensed devices to indoor locations and restrict their use from moving vehicles and drones. However apart from suggesting a GPS receiver to sense the presence of GPS satellite signals (usually blocked indoors) to halt transmissions, to date the FCC has no foolproof method to ensure such compliance of an unlicensed device. For example, a savvy operator can simply block the GPS signal with aluminum foil, fooling the device to think it is indoors. With respect to registering the units with automated frequency coordination (AFC) to prevent interference an operational GPS receiver would be the only practical device to determine that the unlicensed device operates on a frequency and at a location it is supposed to be. It is interesting to note that the indoor restriction (no GPS signal) and the need for some method of determining location (GPS working) run counter to each other.

- My clients range from critical infrastructure to public safety. For example South Florida Water Management District employs numerous licensed stations in the 6 GHz band for point to point SCADA data transmission for accurately determining water levels throughout the Florida Everglades, an area which also encompasses heavily populated areas in southeast Florida. To collect accurate and timely storm water data requires the network to have the highest level of availability technically possible. To this end the stations have space diversity and hot standby radios. This same system is important for protection of life and property during conditions of heavy rainfall where signals must be transmitted to activate pumps, valves and dams to divert excess water. Other clients include heavily populated counties of Broward and Miami Dade who utilize the licensed 6 GHz band for support of their 800 and 700 MHz land mobile simulcast trunking systems. These systems also require the highest level of

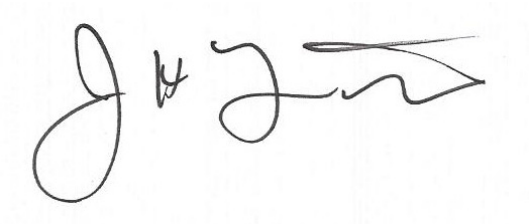
availability and must be free from latency and jitter. These licensed 6 GHz point to point systems have been carefully engineered to operate without interference and to cause no interference to neighboring licensed systems on co and adjacent channels. They are engineered at power levels that give only a certain signal margin to accommodate fading due to propagation changes. To add interference into the already tightly designed systems will result in delayed or incomplete SCADA data retrieval and delayed or failure to operate pumps and dams in reaction to storm water. For the 800 and 700 MHz Land Mobile systems in southeast Florida, the increased interference will result directly in impaired audio quality and signal coverage for Public Safety officers and First Responders.

- According to the Commissions own analysis the introduction of unlicensed 6 GHz stations into the vicinity of licensed 6 GHz stations will require some form of automated frequency coordination (AFC) technique. This requirement exists regardless of power level or location of the unlicensed device. The manner and method of such a mechanism is undetermined but it must be provided. Furthermore the device cannot be allowed to operate unless it is located inside a structure and even with this precaution; the device could cause interference if used in a high rise and/or near a window. The FCC must work to determine how the undesired operation of the device can be prevented and what mechanisms legal and practical can be made to prevent misuse of the device by an installer.

- The use of the automated frequency coordination (AFC) database implies that the device must somehow have connection with the Internet to obtain the database and/or register itself. How will this be done? What practical method will prevent an unlicensed station from being used “off line” with a stale database. How will the database be protected from being intentionally corrupted? How will a licensee identify a rogue unlicensed unit? How will illegal operation of such a unit be punished?

- Adjacent channel protection is as important as co channel protection. The FCC must consider data provided by the Fixed Wireless Communications Commission to ensure that fixed link adjacent channels are likewise fully protected.

Respectfully



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